Contents Volume 90, 1991

Frontispiece IX

Preface
G. Ohring (Washington, DC, USA) 1

Clouds, the Earth's radiation budget, and the hydrologic cycle
D.A. Randall and S. Tjemkes (Fort Collins, CO, USA) 3

Estimation of the Earth's radiation budget from narrowband NOAA satellite observations
H. Jacobowitz (Washington, DC, USA) 11

On the retrieval of surface radiation budget components from satellites
J. Schmetz (Darmstadt, Germany) 17

Cloud and aerosol products at NOAA/NESDIS
L.L. Stowe (Washington, DC, USA) 25

Use of operational satellite data for study of clouds and radiation in climate
W.B. Rossow (New York, NY, USA) 33

Using ISCCP-B3 data to evaluate model-generated cloudiness
J.-J. Morcrette (Reading, UK) 41

A cirrus cloud climatology from NOAA/HIRS
D. Wylie (Madison, WI, USA) and W.P. Menzel (Washington, DC, USA) 49

NESDIS operational ozone data products
W.G. Planet (Washington, DC, USA) 55

Comparison between TOMS, TOVS and DOBSON observations: satellite and surface views of total column zone
D. Chesters (Greenbelt, MD, USA) and A. Neuendorffer (Hillcrest Heights, MD, USA) 61

Monitoring the stratosphere with satellites and the network for detection of stratospheric change
A.J. Miller (Washington, DC, USA) 69

Ozone measurements from the NOAA-9 and the Nimbus-7 satellites: implications of short and long term variabilities
S. Chandra, R.D. McPeters, R.D. Hudson (Greenbelt, MD, USA) and W. Planet (Washington, DC, USA) 73

Stratospheric monitoring with TOVS data
M.E. Gelman (Washington, DC, USA) 75

Operational estimation of precipitation from satellite data
R.A. Scofield (Washington, DC, USA) 79

Rain estimation from combining geosynchronous IR and low-orbit microwave data
R.F. Adler, A.J. Negri (Greenbelt, MD, USA) and I.M. Hakkarinen (Laurel, MD, USA) 87

The reliance on operational weather satellites for the production of a global precipitation climatology
J.E. Janowiak (Washington, DC, USA) 93

Diagnostic, historic, and predictive analyses of rainfall using passive microwave image data
E.C. Barrett (Bristol, UK) 99

NESDIS operational sounding products from Polar Orbiting Satellites
E.L. Burdsall (Washington, DC, USA) 107

Precision tropospheric temperature monitoring 1979–1990
R.W. Spencer, J.R. Christy (Huntsville, AL, USA) and N.C. Grody (Washington, DC, USA) 113

Derivation of long-term climate data sets from NOAA's HIRS2/MSU
M.T. Chahine (Pasadena, CA, USA) and J. Susskind (Greenbelt, MD, USA) 121

Comparison of microwave temperature sounders for atmospheric monitoring
D.A. Moore (Landover, MD, USA) and H.F. Drahos Jr. (Washington, DC, USA) 127

A climatic database of atmospheric thermal measurements from operational environmental satellites (ATMOES)
A. Reale and M. Chalfant (Washington, DC, USA) 135

Operational production of winds from cloud motions
G. Rutledge, E. Legg (Washington, DC, USA) and P. Menzel (Madison, WI, USA) 141

Cloud motion winds from METEOSAT: performance of an operational system
J. Schmetz (Darmstadt, Germany) 151

Utilization of satellite winds for climate and global change studies
W.E. Baker (Washington, DC, USA) 157
Suggestions for improving the derivation of winds from geosynchronous satellites
W.E. Shenk (Greenbelt, MD, USA) 165
Operational production of multichannel sea surface temperatures from NOAA polar satellite AVHRR data
W.G. Pichel (Washington, DC, USA) 173
Satellite-derived global sea surface temperature fields: 1982-1989
O.B. Brown, R.H. Evans (Miami, FL, USA) and P. Cornillon (Kingston, RI, USA) 179
Sea surface temperatures analyses from in situ and satellite data
R.W. Reynolds (Washington, DC, USA) 183
The NOAA Global Vegetation Index product - A review
J.D. Tarpley (Camp Springs, MD, USA) 189
Monitoring land ecosystems using the NOAA Global Vegetation Index data set
G.G. Gutman (Washington, DC, USA) 195
Climate monitoring using an AVHRR-based vegetation index
M.S. Halpert (Washington, DC, USA) 201
The Navy/NOAA Joint Ice Center's role in the climate and global change program
F.E. Kniskern (Washington, DC, USA) 207
NOAA satellite snow cover data
M. Matson (Washington, DC, USA) 213
Operational satellites and the global monitoring of snow and ice
J.E. Walsh (Urbana, IL, USA) 219
Real-time climate monitoring of global snow cover
C.F. Ropelewski (Washington, DC, USA) 225
Cryospheric products from the DMSP-SSM/I: status and research applications
R.G. Barry (Boulder, CO, USA) 231
Merging operational satellite and historical station snow cover data to monitor climate change
D.A. Robinson (New Brunswick, NJ, USA) 235
Operational calibration processing in NESDIS
M.P.W. Weinreb (Washington, DC, USA) 241
The validation of microwave spaceborne observations by surface-based remote sensors
E.R. Westwater and L.S. Fedor (Boulder, CO, USA) 247
Laboratory performance verification of operational imagers and sounders
E.W. Koenig (Fort Wayne, IN, USA) 253
Pre-launch calibration of AVHRR reflected-solar channels
P. Abel (Washington, DC, USA) 259
Improving the accuracy of sphere-source calibrations
J.H. Walker and C.L. Cromer (Gaithersburg, MD, USA) 265
Indirect calibration of visible channel data
C.L. Brest (New York, NY, USA) 271
The accessibility of satellite data at the National Climatic Data Center (NCDC)
L. Lauritson (Camp Springs, MD, USA) 279
The Image Library and Browse System (ILABS)
A.G. DeCotiis, V. Jandhyala and G. Goodrum (Camp Springs, MD, USA) 281
An on-line inventory of NCDC's polar orbiting satellite data
K. Metcalf (Camp Springs, MD, USA) 287
NOAA satellite observing systems: status and plans
W.J. Hussey, S.R. Schneider, R.S. Gird and B.H. Needham (Washington, DC, USA) 289
European systems of operational meteorological satellites
J. Morgan (Darmstadt-Eberstadt, Germany) 297
The meteorological satellite programme of China
Zou Jing-meng (Beijing, P.R. China) 303
Earth observing system of NASDA
T. Tanaka (Tokyo, Japan) 307
Mission to Planet Earth
G.S. Wilson and W.T. Huntress (Washington, DC, USA) 317

Milankovitch rhythms in the Cretaceous: A GCM modelling study
J. Park (New Haven, CN, USA) and R.J. Oglesby (Providence, RI, USA) 329
Biotic enhancement of weathering and surface temperatures on earth since the origin of life
D.W. Schwartzman (Washington, DC, USA) and T. Volk (New York, NY, USA) 357
A new, detailed ice-age oxygen-18 record from the ice-sheet margin in central West Greenland
N. Reeh, H. Oerter, A. Letréguilly, H. Miller and H.-W. Hubberten (Bremerhaven, Germany) 373
The Greenland ice sheet through the last glacial–interglacial cycle
A. Letréguilly, N. Reeh and P. Huybrechts (Bremerhaven, Germany) 385
Quaternary and Tertiary microfossils from beneath Ice Stream B: Evidence for a dynamic West Antarctic Ice Sheet history
R.P. Scherer (Columbus, Ohio, USA) 395